Title: Method and Apparatus for Dynamic, Real-Time Market Segmentation
Inventor(s): AFN-001
Atty Docket No. AFN-001
Atty/Agent: John D. Lanza
Express Mail Label No. EL917346544US

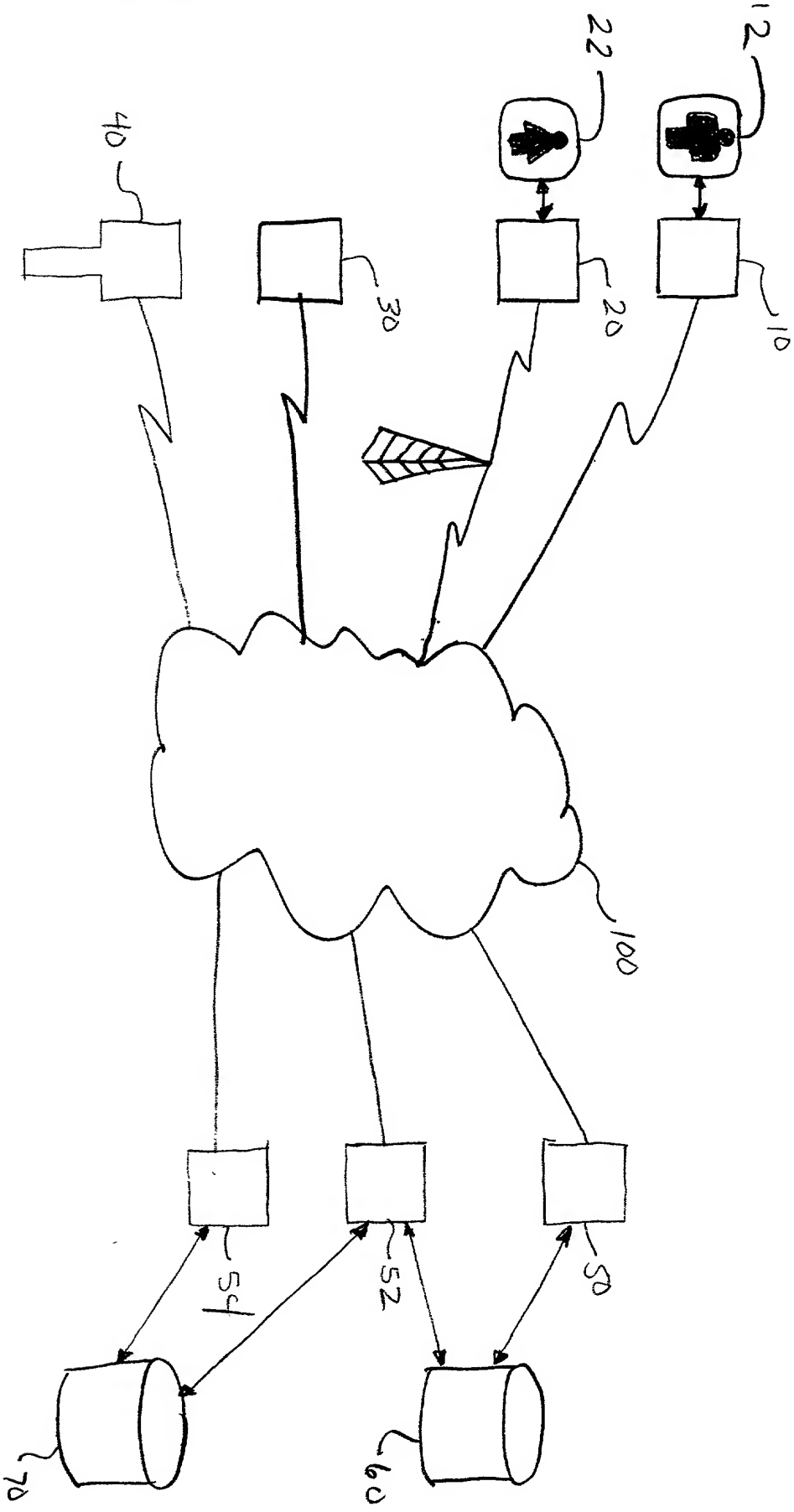

FIG. 1

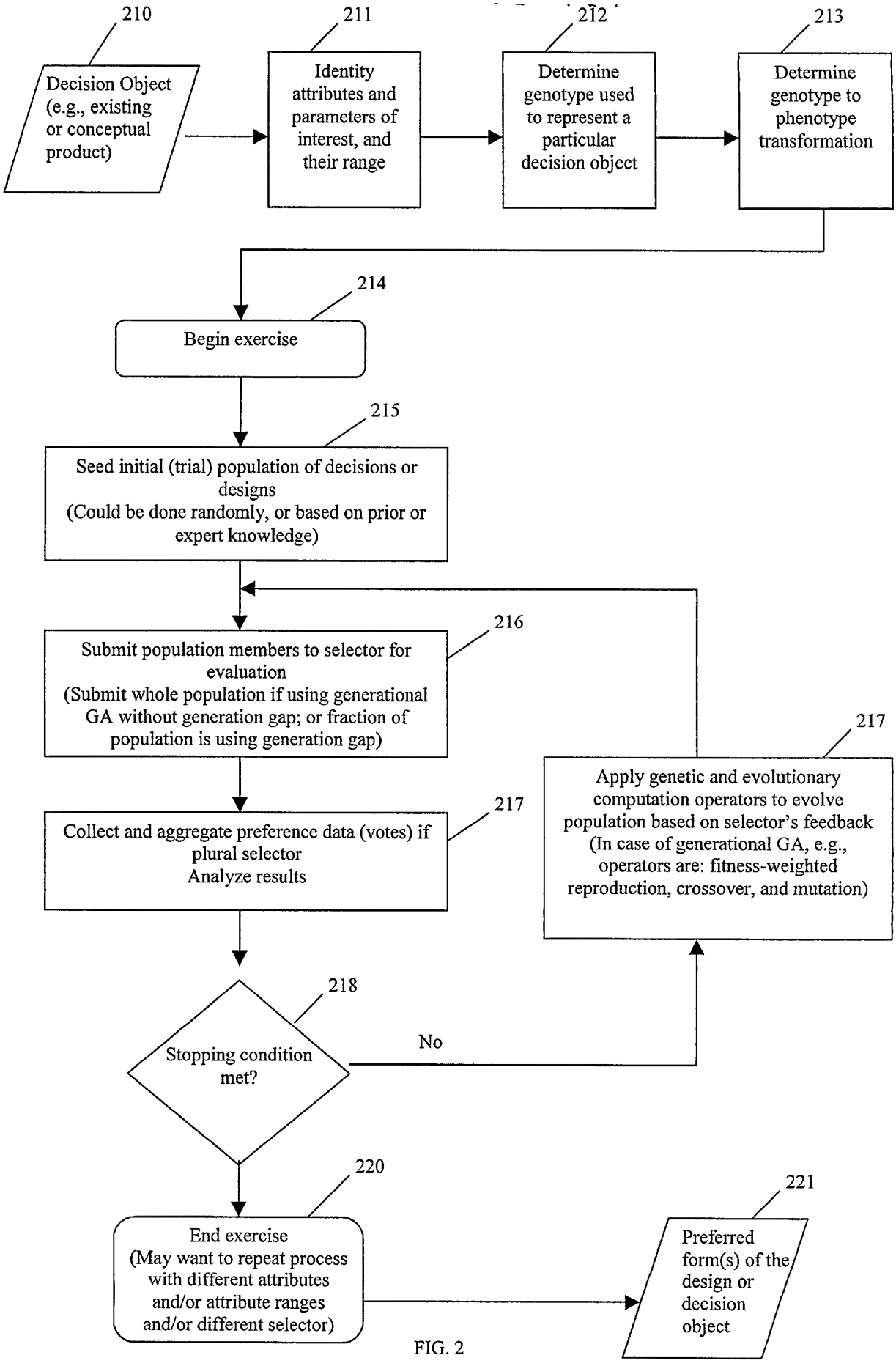
210
Decision Object (e.g., existing or conceptual product)
211
Identity attributes and parameters of interest, and their range
212
Determine genotype used to represent a particular decision object
213
Determine genotype to phenotype transformation
214
Begin exercise
215
Seed initial (trial) population of decisions or designs
(Could be done randomly, or based on prior or expert knowledge)
216
Submit population members to selector for evaluation
(Submit whole population if using generational GA without generation gap; or fraction of population is using generation gap)
217
Collect and aggregate preference data (votes) if plural selector
Analyze results
217
Apply genetic and evolutionary computation operators to evolve population based on selector's feedback
(In case of generational GA, e.g., operators are: fitness-weighted reproduction, crossover, and mutation)
218
Stopping condition met?
No
220
End exercise
(May want to repeat process with different attributes and/or attribute ranges and/or different selector)
221
Preferred form(s) of the design or decision object

FIG. 2

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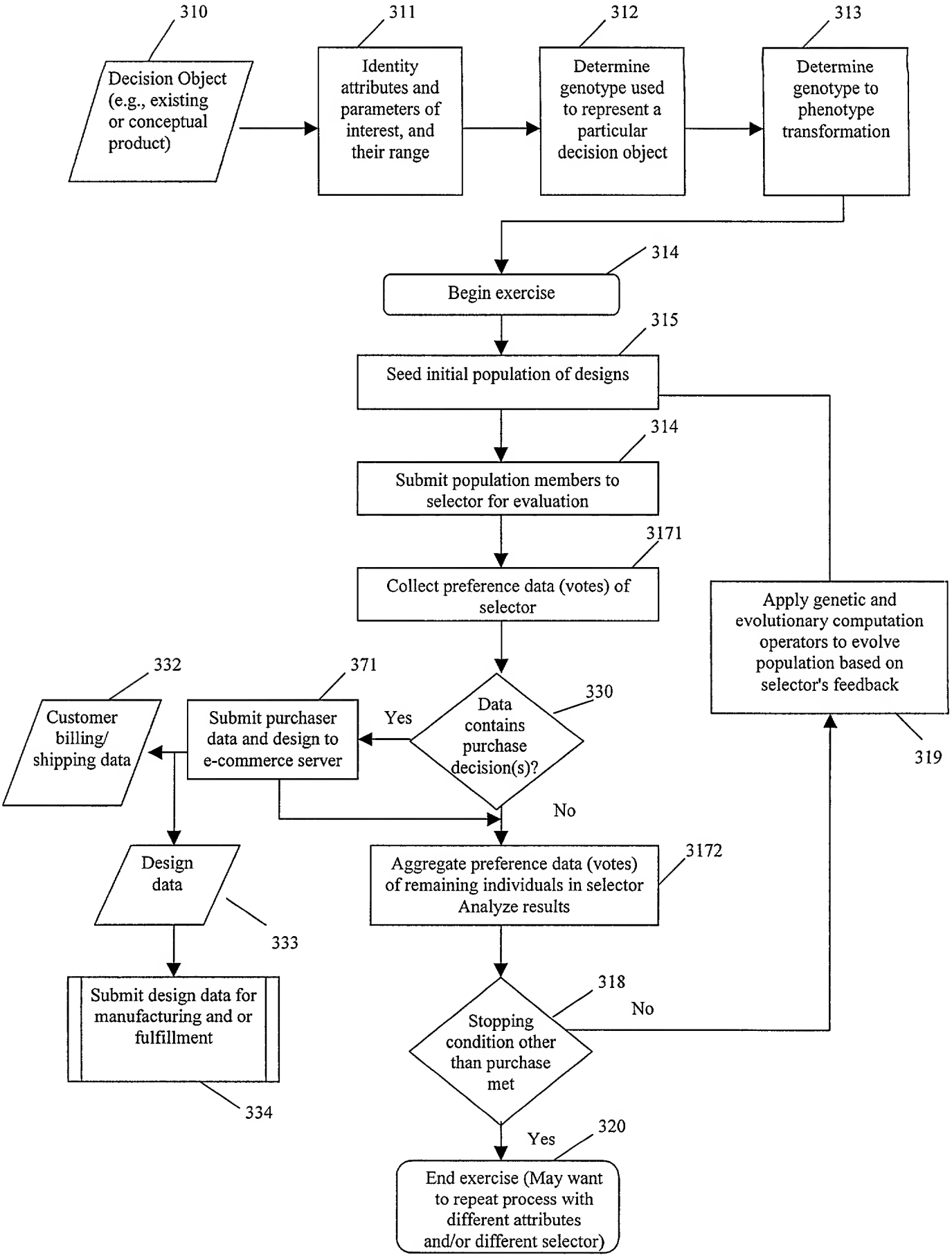

FIG. 3

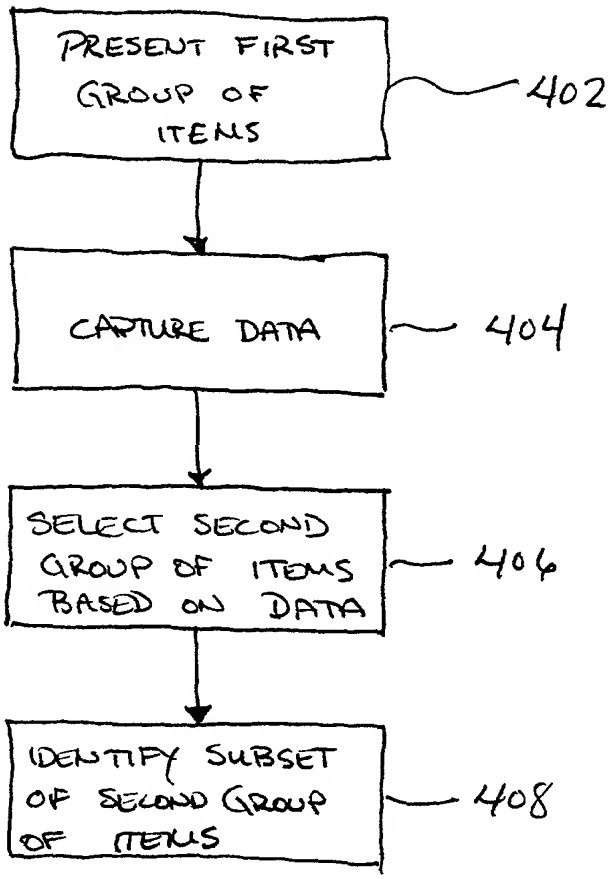
PRESENT FIRST GROUP OF ITEMS
402
CAPTURE DATA
404
SELECT SECOND GROUP OF ITEMS BASED ON DATA
406
IDENTIFY SUBSET OF SECOND GROUP OF ITEMS
408

FIG. 4

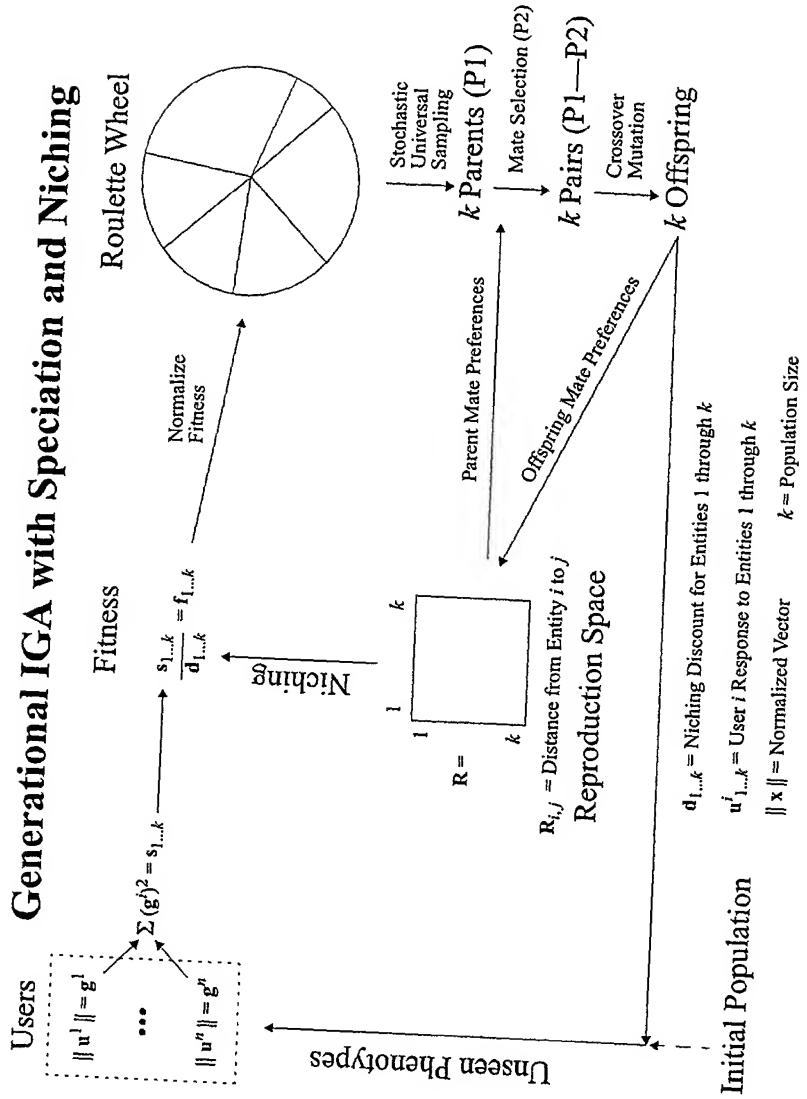
Generational IGA with Speciation and Niching
Users
Fitness
Roulette Wheel
Normalize Fitness
Niching
Stochastic Universal Sampling
k Parents (P1)
Mate Selection (P2)
k Pairs (P1—P2)
Crossover Mutation
k Offspring
Parent Mate Preferences
Offspring Mate Preferences
Reproduction Space
Unseen Phenotypes
Initial Population
$\| u^1 \| = g^1$
$\| u^n \| = g^n$
$\Sigma (g^i)^2 = s_{1...k}$
$\frac{s_{1...k}}{d_{1...k}} = f_{1...k}$
R =
$R_{i,j}$ = Distance from Entity i to j
$d_{1...k}$ = Niching Discount for Entities 1 through k
$u^i_{1...k}$ = User i Response to Entities 1 through k
$\| x \|$ = Normalized Vector
k = Population Size

FIG. 4A

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Inventor(s): AFN-001
Atty Docket No. AFN-001
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Computation of Mating Probabilites

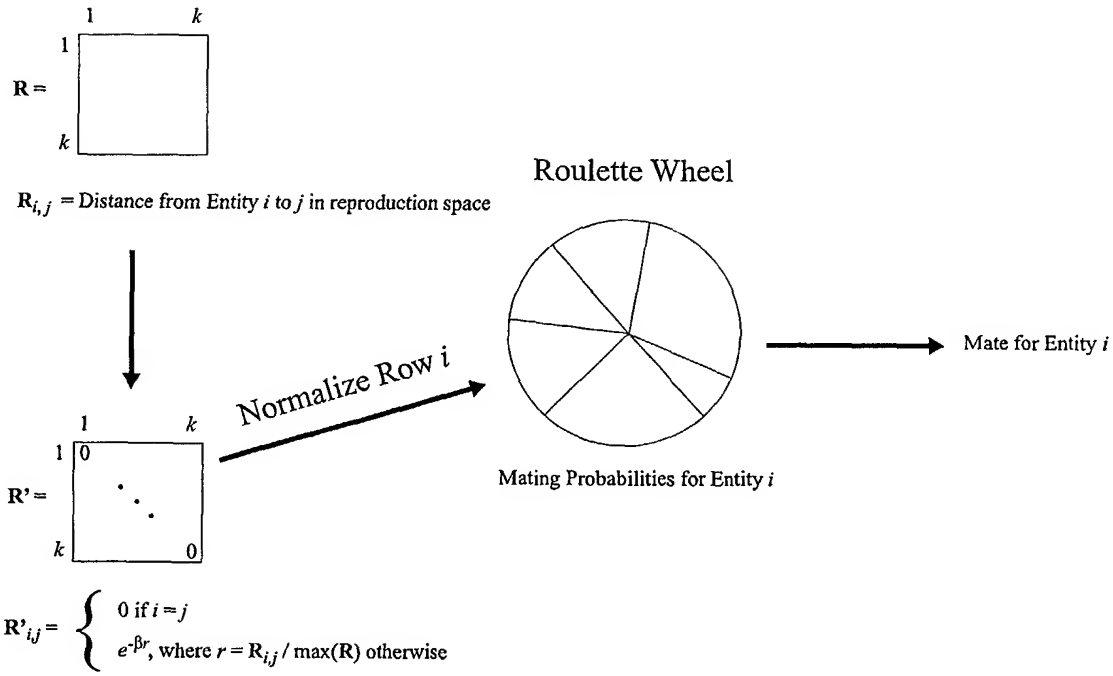


FIG. 4B

Title: Method and Apparatus for Dynamic, Real-Time Market Segmentation
Inventor(s): AFN-001
Atty Docket No. AFN-001
Atty/Agent: John D. Lanza
Express Mail Label No. EL917346544US

Computation of Niching (Sharing) Discount

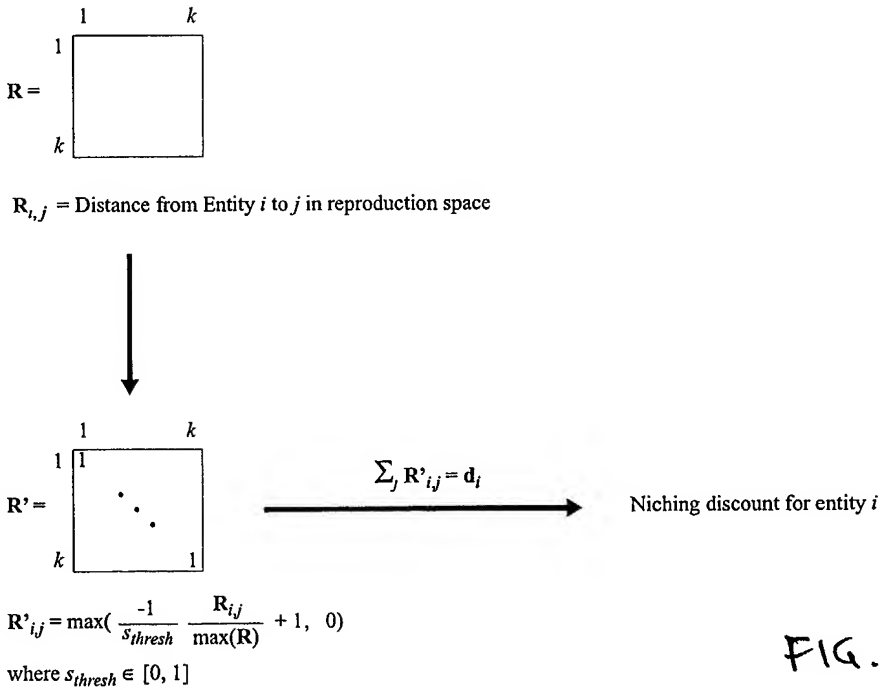
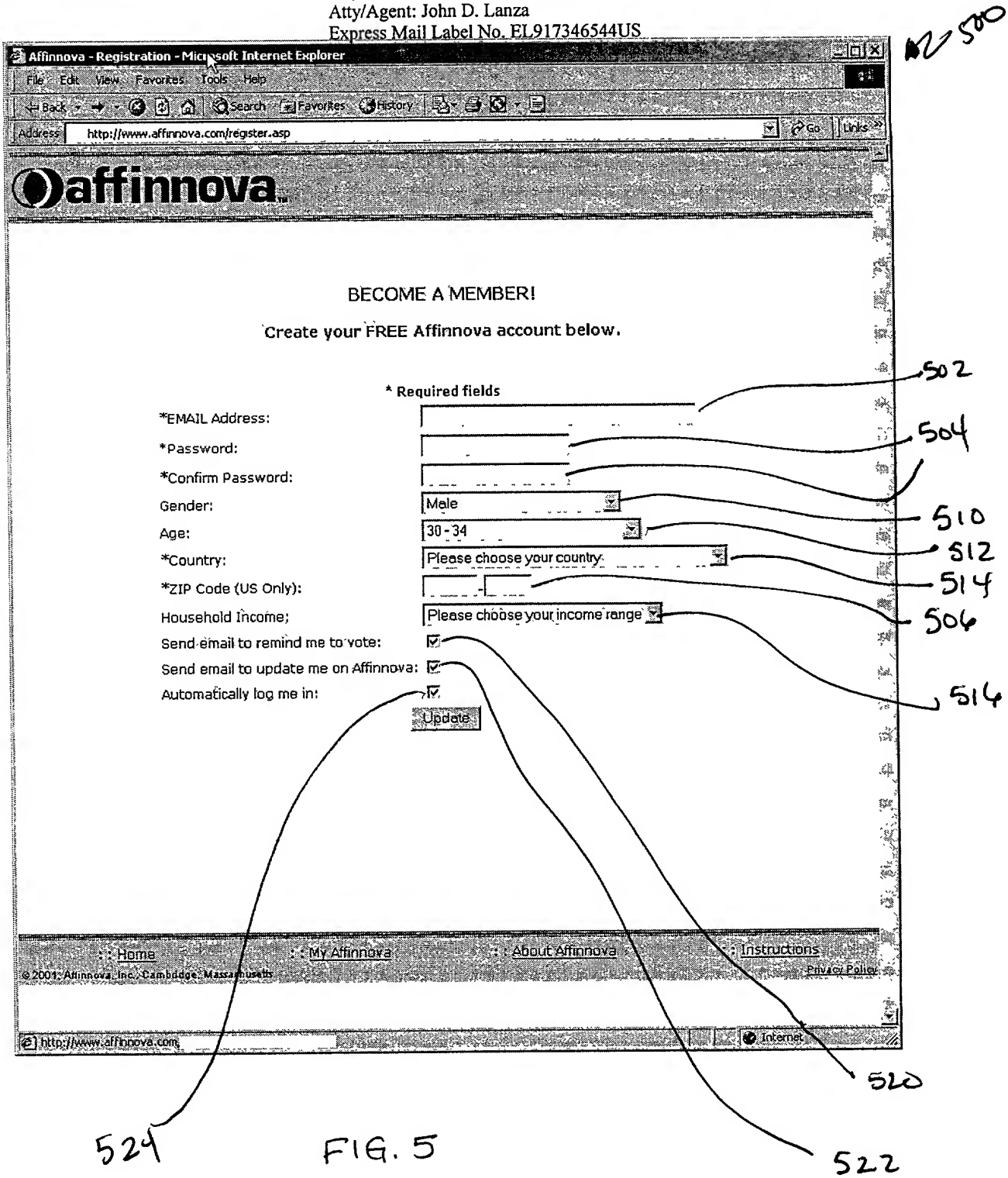


FIG. 4C


500
Affinnova - Registration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://www.affinnova.com/register.asp
Go Links
affinnova
BECOME A MEMBER!
Create your FREE Affinnova account below.
* Required fields
*EMAIL Address:
*Password:
*Confirm Password:
Gender:
Male
Age:
30 - 34
*Country:
Please choose your country
*ZIP Code (US Only):
Household Income:
Please choose your income range
Send email to remind me to vote:
Send email to update me on Affinnova:
Automatically log me in:
Update
Home
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502
504
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512
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514
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522
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FIG. 5

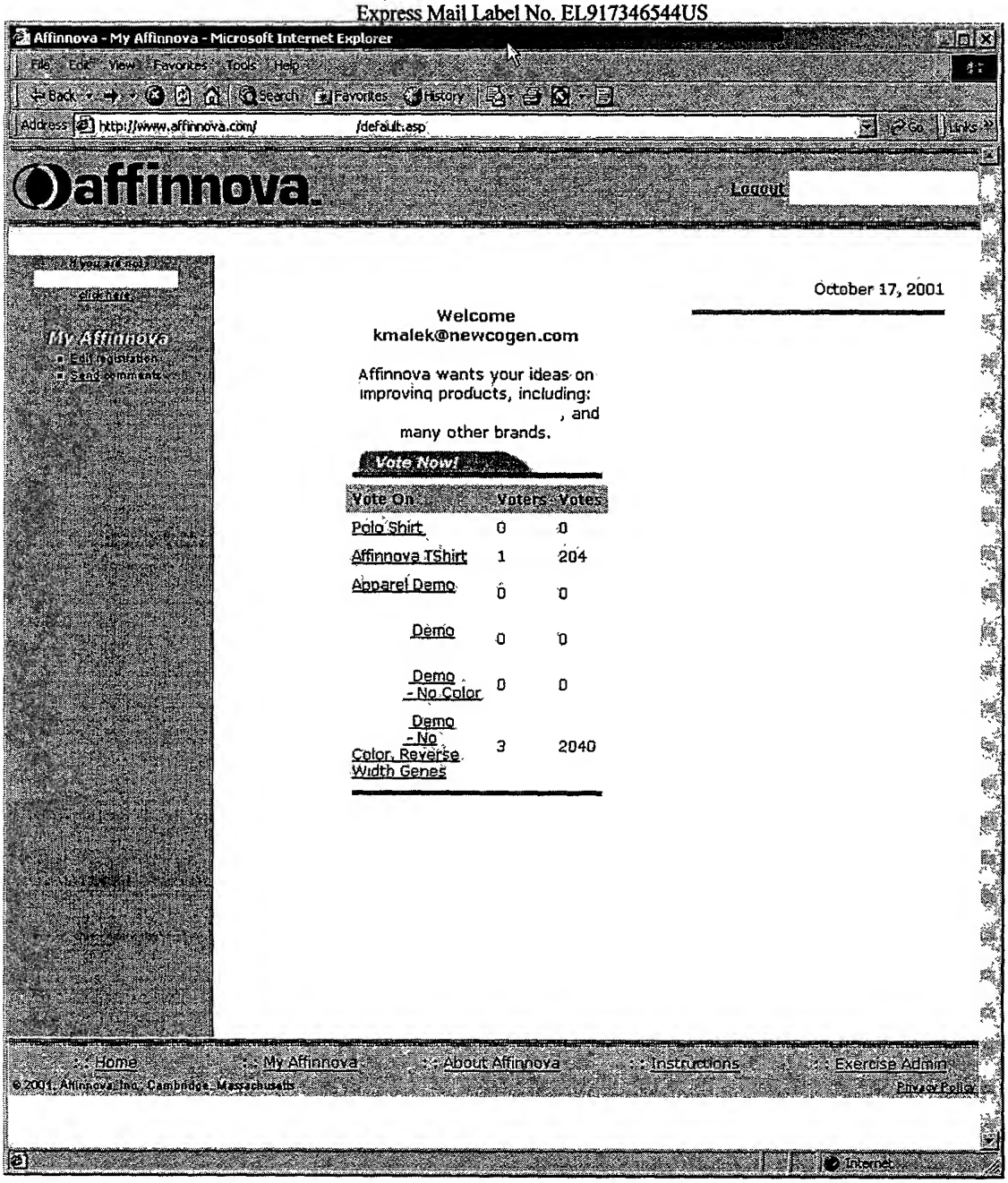
Affinnova - My Affinnova - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://www.affinnova.com/ /default.asp
affinnova
Logout
My Affinnova
October 17, 2001
Welcome
kmalek@newcogen.com
Affinnova wants your ideas on improving products, including:
, and
many other brands.
Vote Now!
Vote On
Voters
Votes
Polo Shirt 0 0
Affinnova TShirt 1 204
Apparel Demo 0 0
Demo 0 0
Demo - No Color 0 0
Demo - No Color, Reverse Width Genes 3 2040
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FIG. 6

Title: Method and Apparatus for Dynamic, Real-Time Market Segmentation
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Atty/Agent: John D. Lanza
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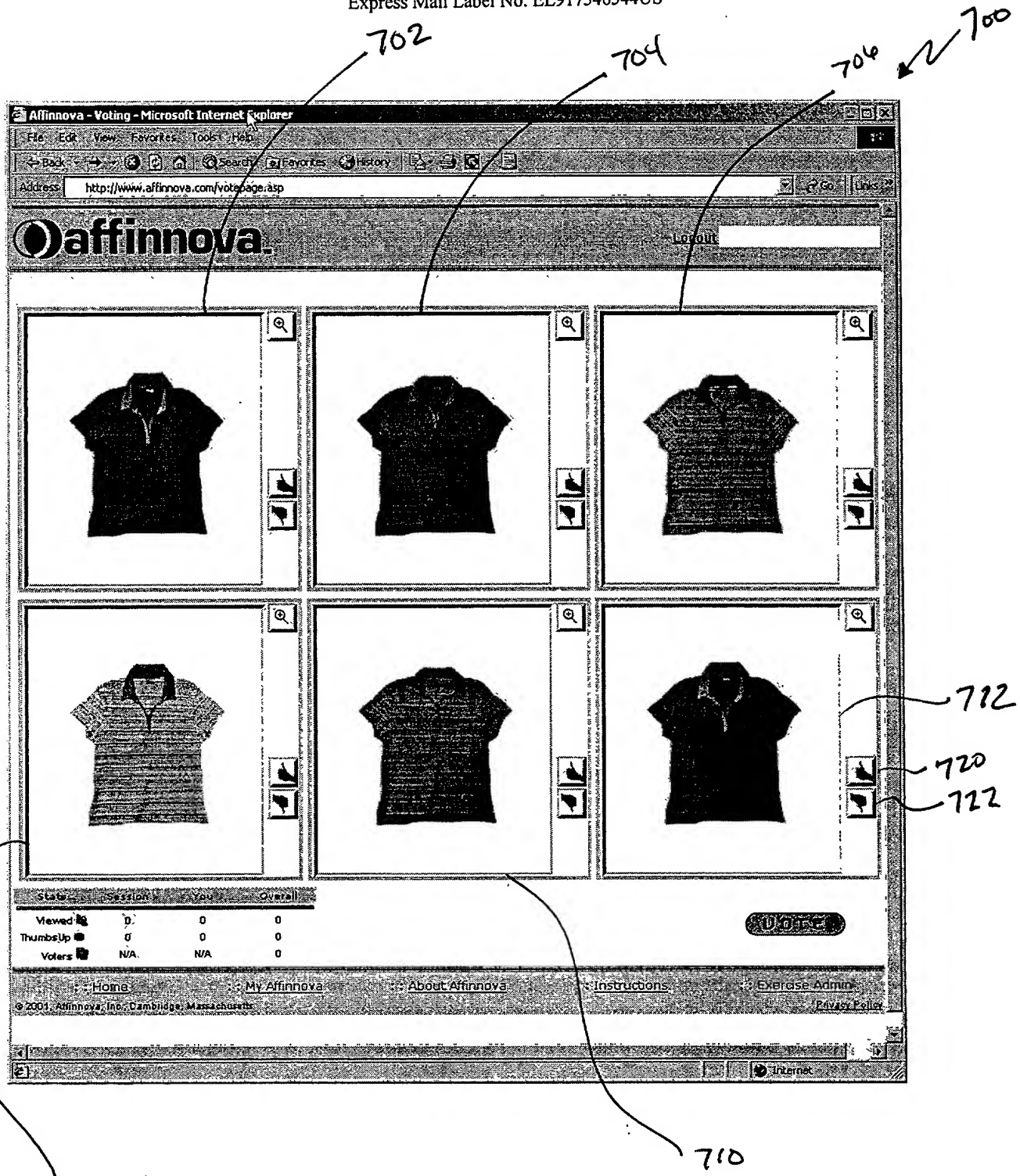


FIG. 7

Title: Method and Apparatus for Dynamic, Real-Time Market Segmentation
Inventor(s): AFN-001
Atty Docket No. AFN-001
Atty/Agent: John D. Lanza
Express Mail Label No. EL917346544US

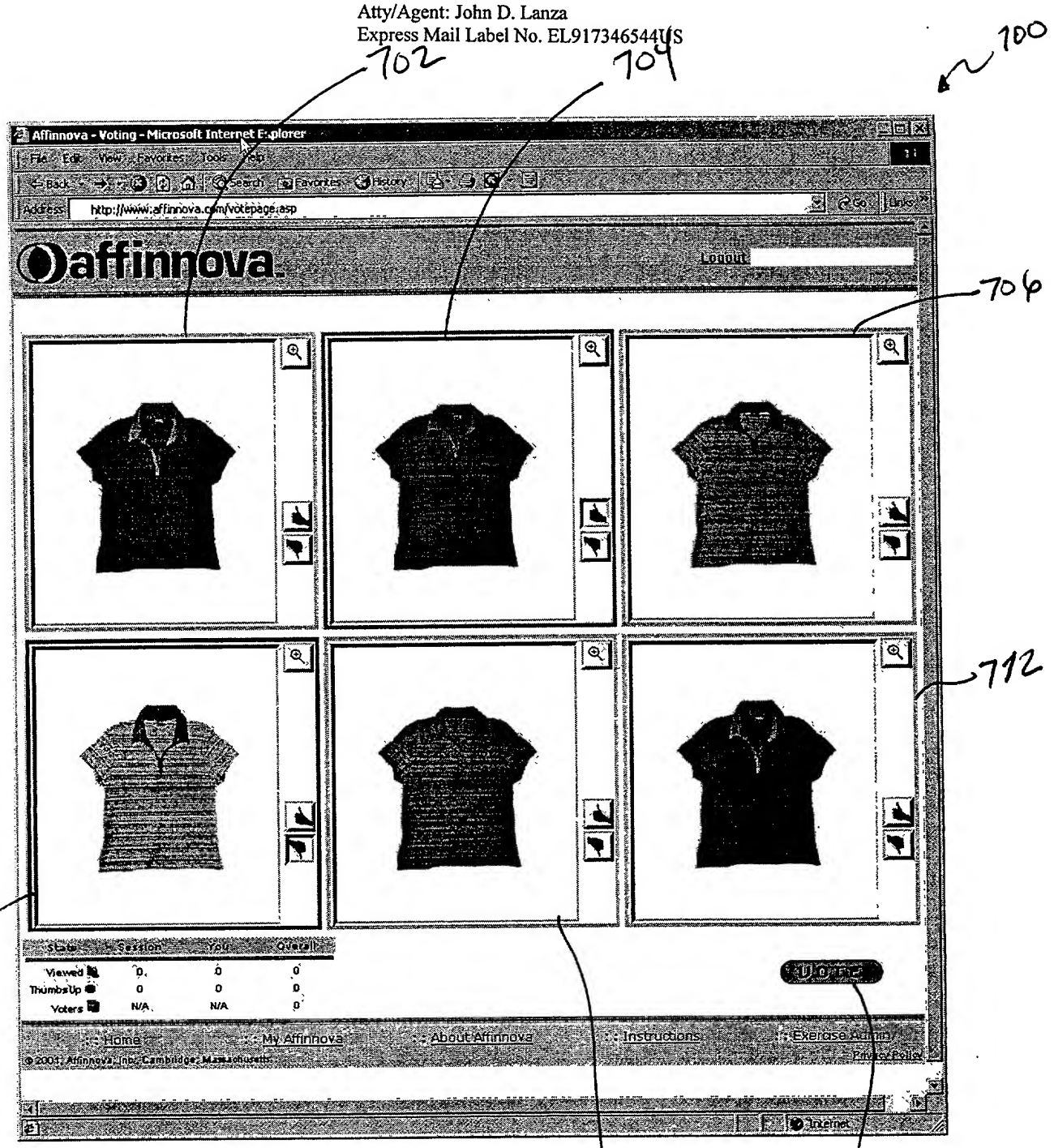
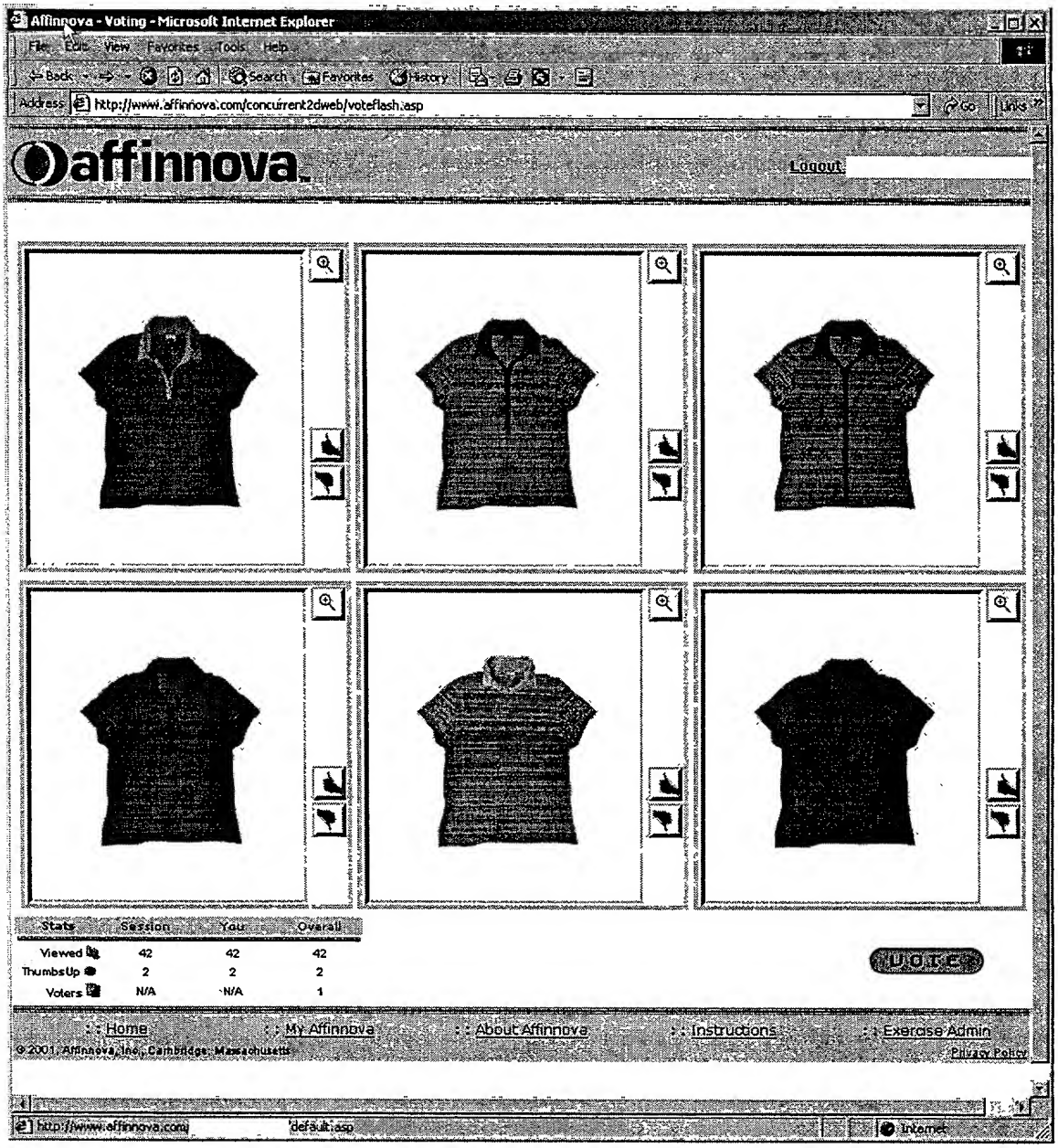


FIG. 7A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File Edit View Favorites Tools Help
Back Search Favorites History
Address http://www.affinnova.com/concurrent2dweb/voteflash.asp
affinnova
Logout
Stats Session You Overall
Viewed 42 42 42
ThumbsUp 2 2 2
Voters N/A N/A 1
VOTE
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http://www.affinnova.com/default.asp
Internet

FIG. 7B

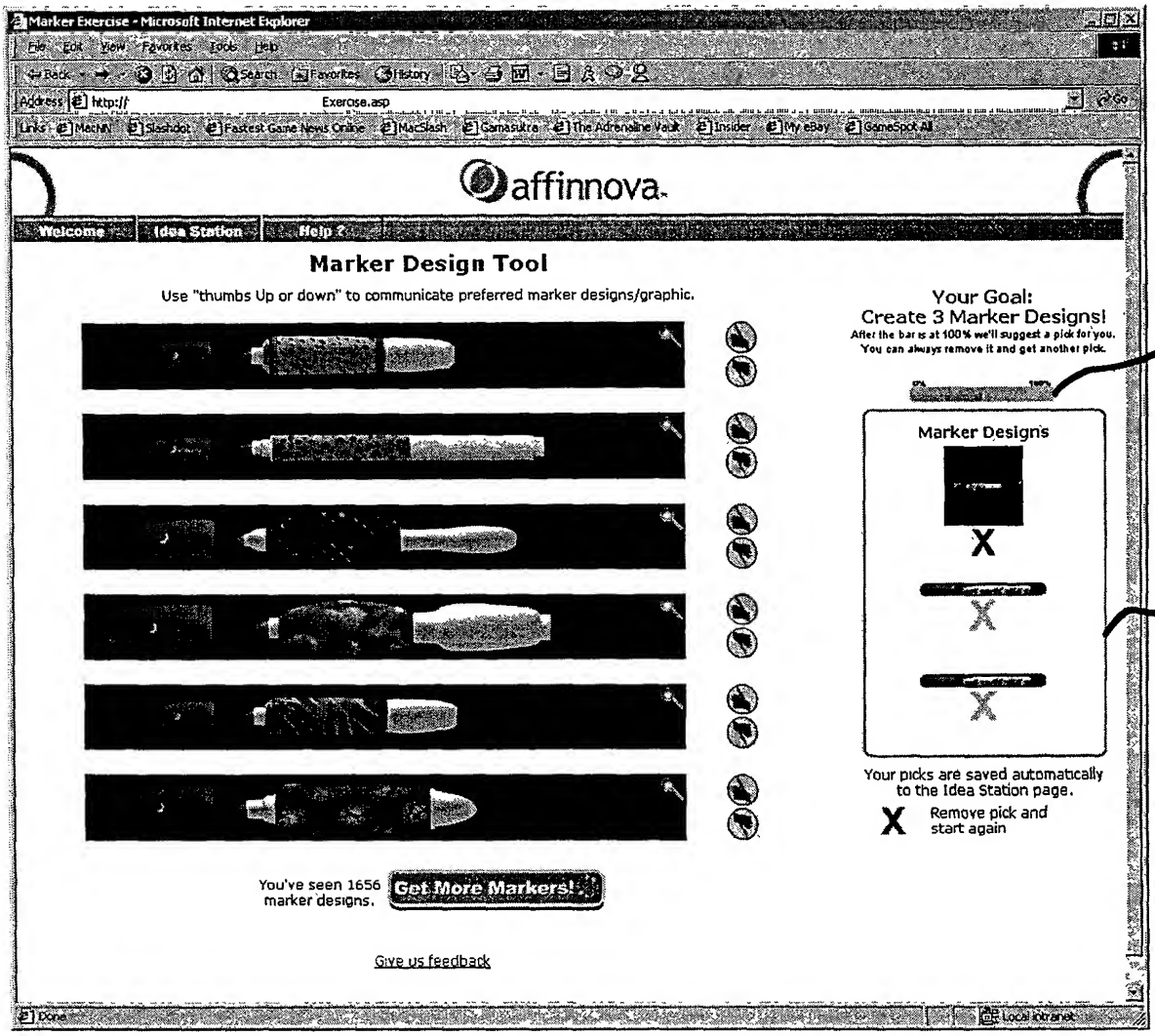
Marker Exercise - Microsoft Internet Explorer
affinnova
Welcome
Idea Station
Help ?
Marker Design Tool
Use "thumbs Up or down" to communicate preferred marker designs/graphic.
Your Goal:
Create 3 Marker Designs!
After the bar is at 100% we'll suggest a pick for you.
You can always remove it and get another pick.
780
Marker Designs
788
Your picks are saved automatically to the Idea Station page.
Remove pick and start again
You've seen 1656 marker designs.
Get More Markers!
Give us feedback

FIG. 7C

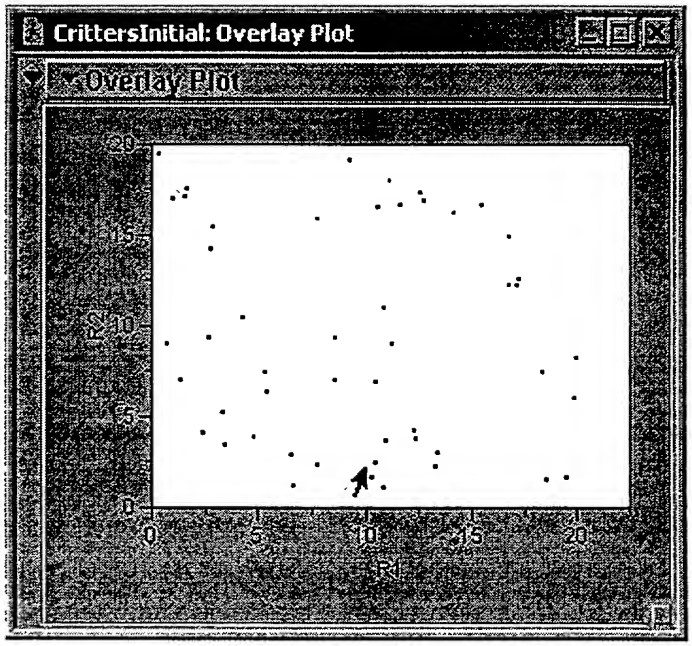

FIG. 8

Express Mail Label No. EL917346544US

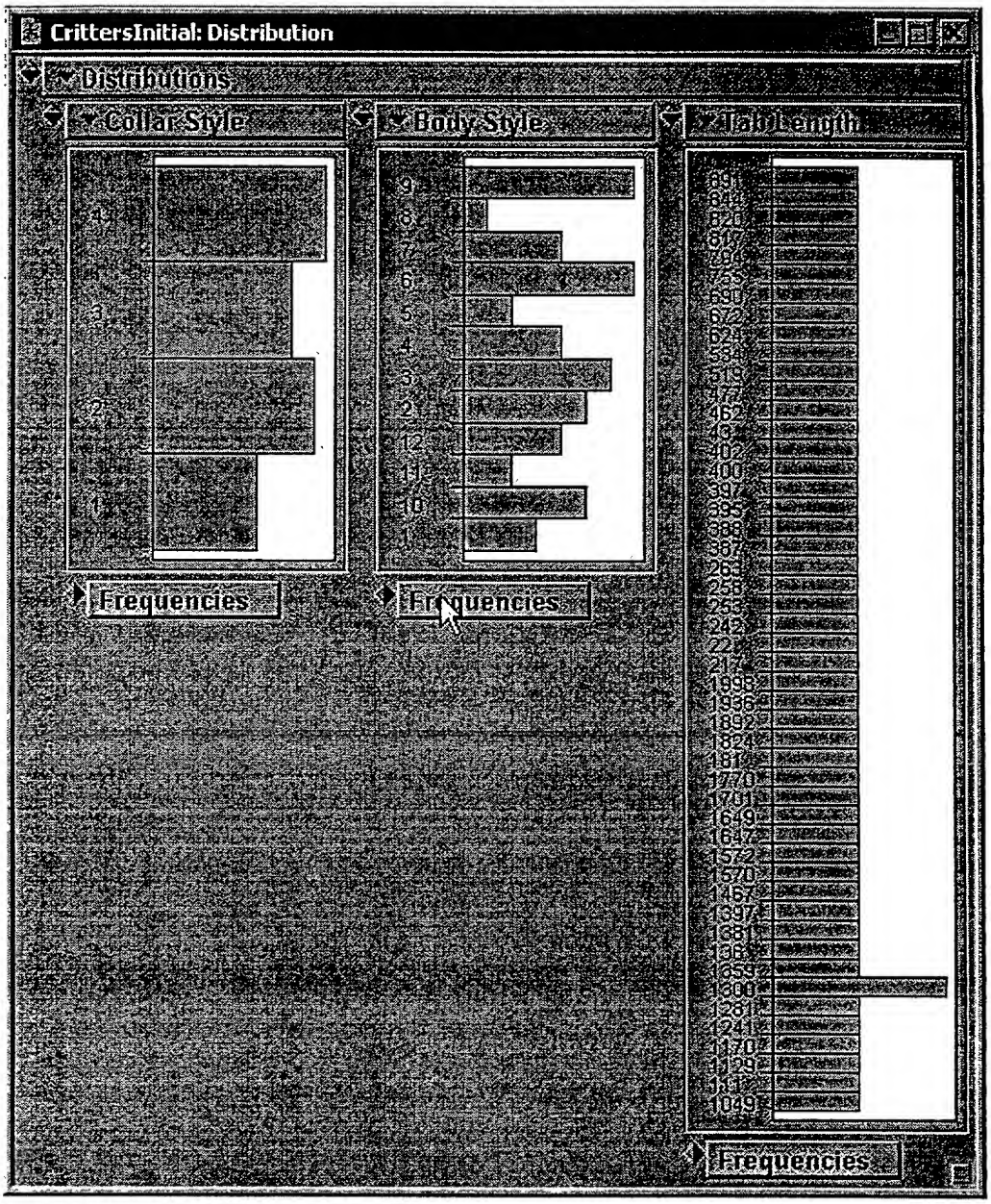
CrittersInitial: Distribution
Distributions
Collar Style
Body Style
Tail Length
Frequencies
Frequencies
Frequencies

FIG. 9

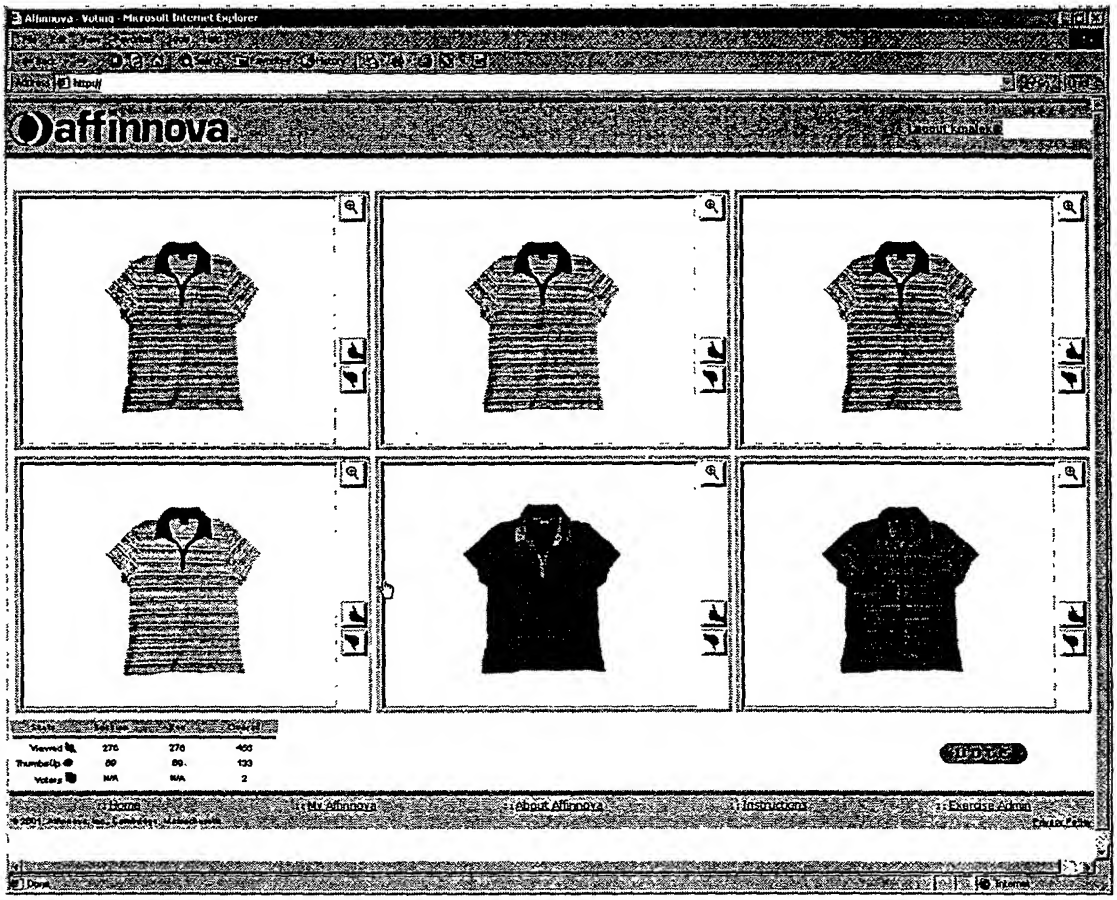
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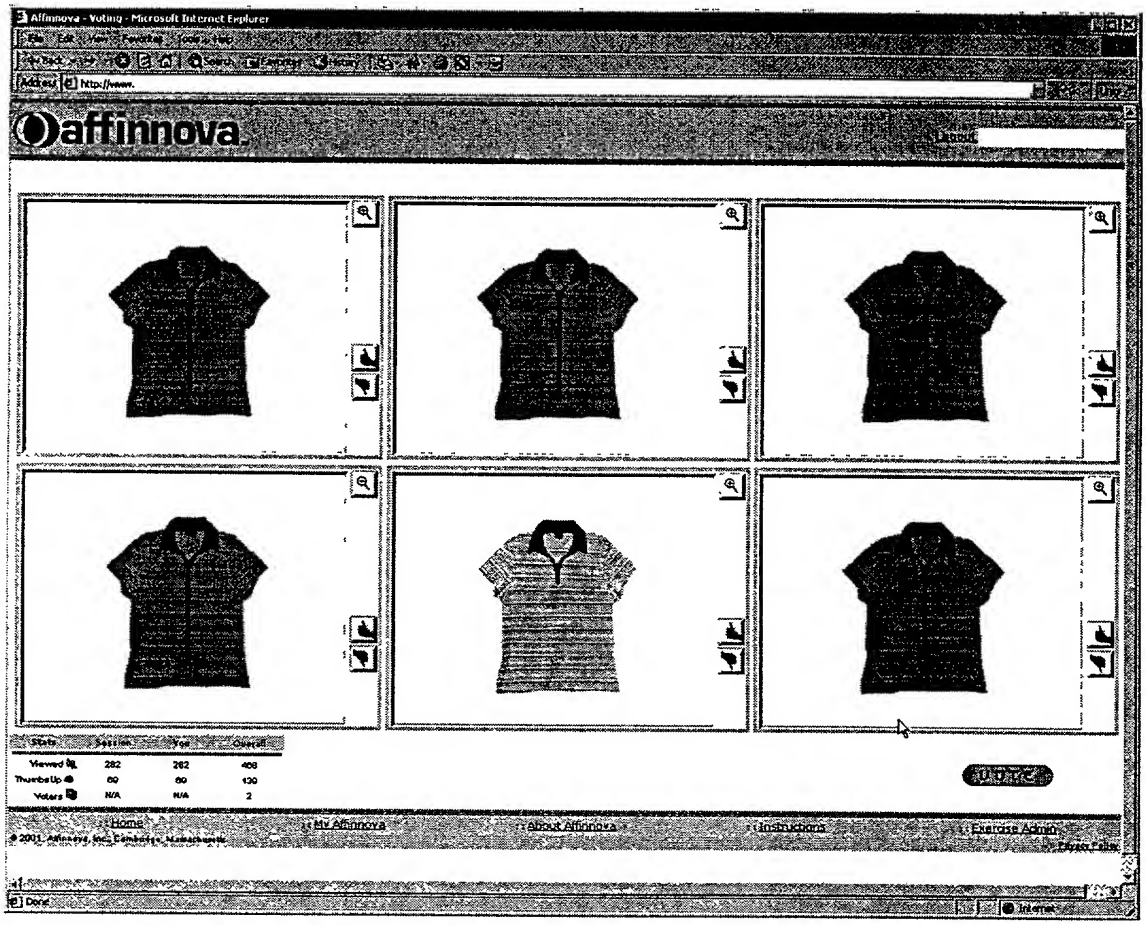
FIG. 10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Exercise Admin

FIG. 11

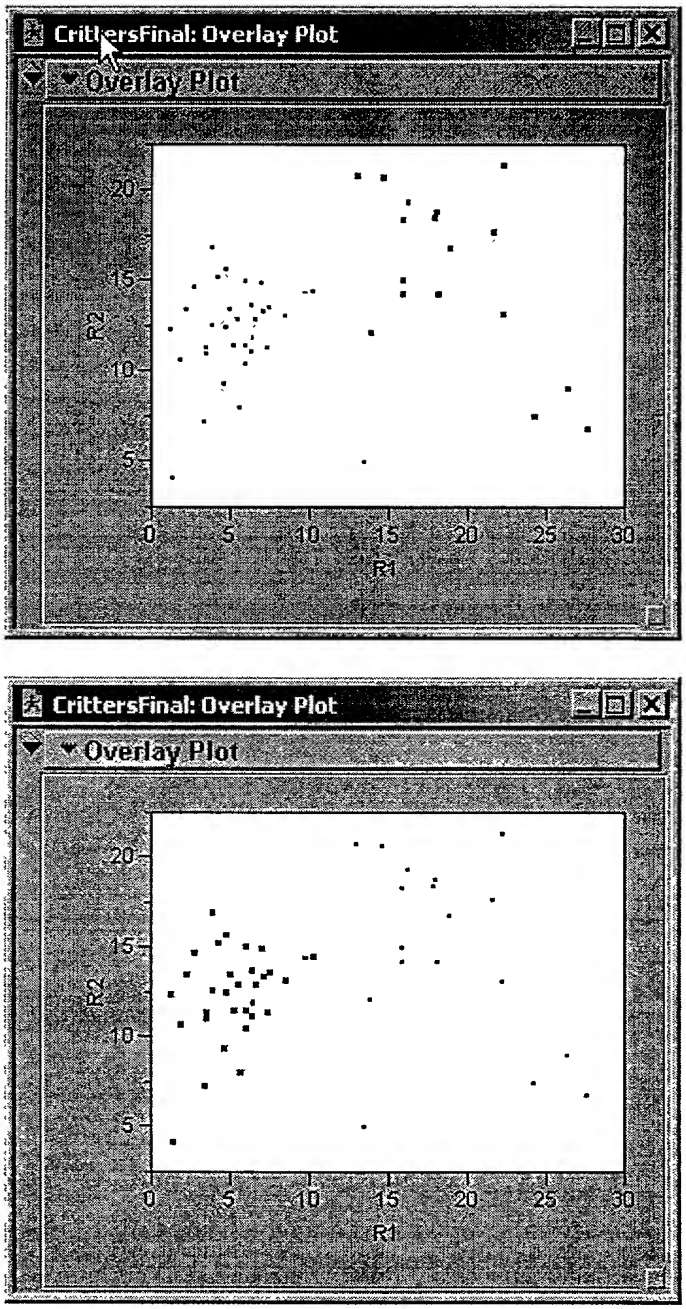
CrittersFinal: Overlay Plot
Overlay Plot
20
15
10
5
R2
0
5
10
15
20
25
30
R1
CrittersFinal: Overlay Plot
Overlay Plot
20
15
10
5
R2
0
5
10
15
20
25
30
R1

FIG. 12

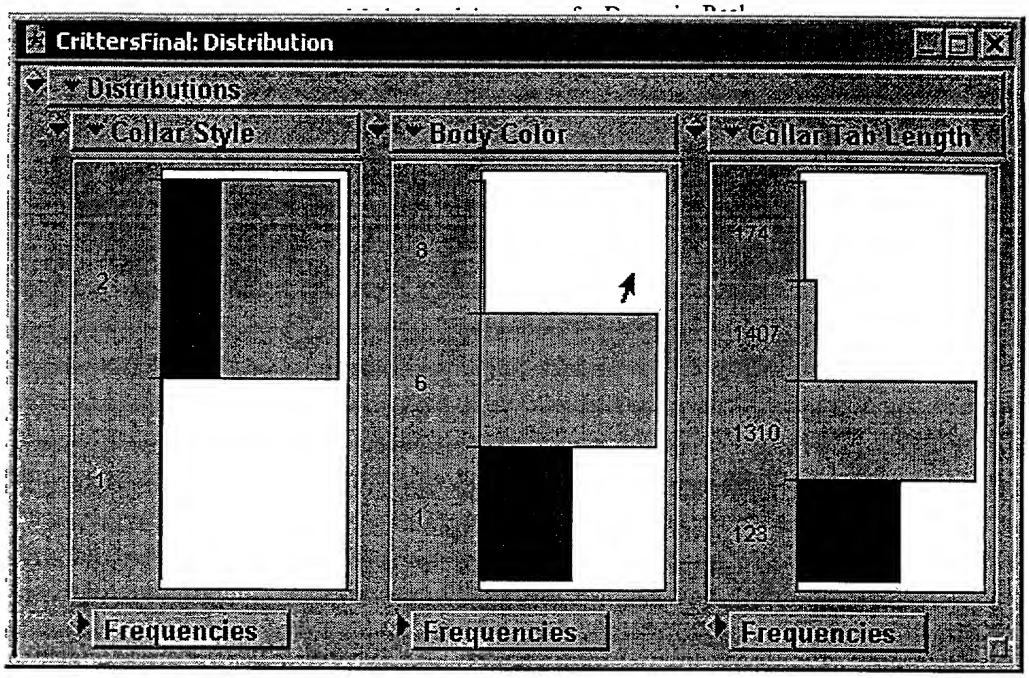
CrittersFinal: Distribution
Distributions
Collar Style
Body Color
Collar Tab Length
2
1
3
6
1
474
1407
1310
123
Frequencies
Frequencies
Frequencies

FIG. 13

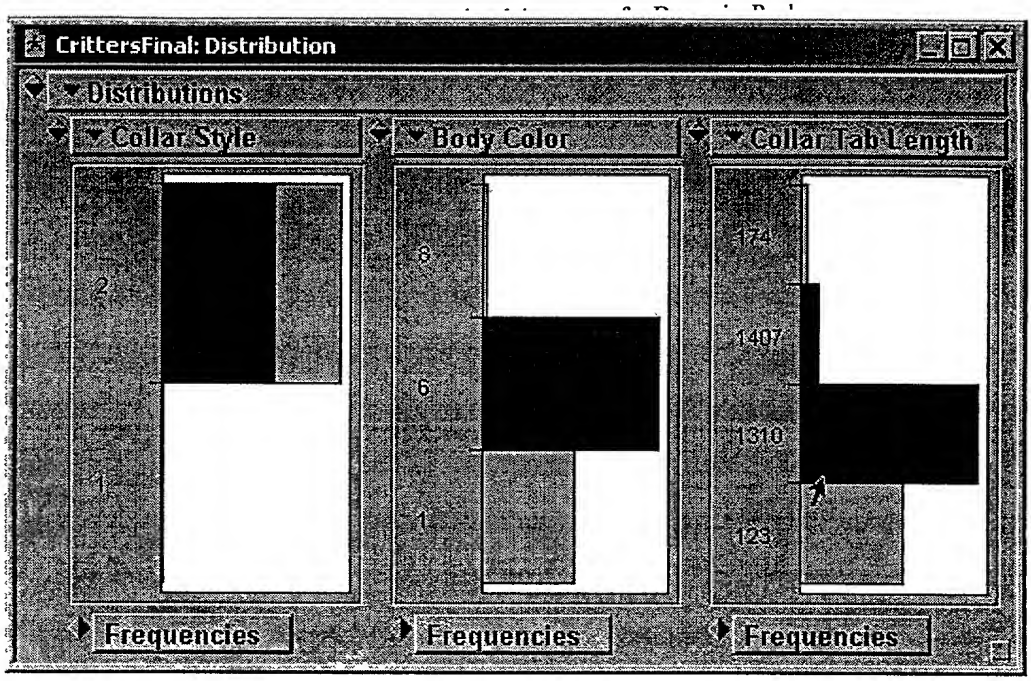
CrittersFinal: Distribution
Distributions
Collar Style
Body Color
Collar Tab Length
2
1
8
6
1
174
1407
1310
123
Frequencies
Frequencies
Frequencies

FIG. 14